METHODS OF SAMPLING AND TESTING
MT 413-05
INSPECTION AND TESTING OF FENCING MATERIAL

Revised Edition – September 2005

Deleted – References to ASTM.

Added - References to AASHTO and Montana Materials Manual.

Chain Link Fence – Changed to read: Inspect and sample chain link fence according to AASHTO M 181.

Woven Wire – Changed to read: Inspect and sample woven wire according to AASHTO M 279.

Barbed Wire – Changed to read: Inspect and sample barbed wire according to AASHTO M 280. The following is provided as a general guide for field personnel: **Added –** Section 6.1.1 through 6.1.5 and Note 1.

Steel Fence Posts and Assemblies – Changed to read: Inspect and sample steel fence posts and assemblies according to AASHTO M 281.

Wood Fence Posts – Changed to read: Inspect and sample wood fence posts according to MT 404.

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1 Scope:

1.1 This method is intended to cover the inspection, sampling, and testing of fencing materials.

2 Referenced Documents:

2.1 ***AASHTO:***

M 181 Chain Link Fence
M 279 Metallic-Coated Steel Woven Wire Fence Fabric
M 280 Metallic-Coated (Carbon) Steel Barbed Wire
M 281 Steel Fence Posts and Assemblies, Hot-Wrought

Materials Manual:

MT 404 Method for Inspecting Wood Products

3 General Information:

3.1 Material may be inspected and stored. Acceptable material must be identified by tagging or marking until used.

3.2 Visual inspection of mesh, posts and other parts shall be made for workmanship, dimension, condition of galvanizing and freedom from defects in accordance with specifications. Galvanizing shall be checked for excessive roughness, blisters, sal ammoniac spots, bruises, and flaking. Care and judgment must be exercised in making this inspection. Weave and finish (knuckling or barbed) of mesh shall be checked for compliance with specifications.

3.3 If gates are included in the order the design, general workmanship, dimensions, and condition of galvanizing shall be checked for conformance with specifications and applicable drawings. Welded connections shall be inspected to see that they have been cleaned and re-galvanized or painted with approved paint. Whenever practical, materials used and galvanizing procedure shall be checked for compliance with specifications. Observing the fabrication when feasible will be helpful in this regard.

3.4 Samples shall be submitted to the Materials Bureau accompanied by completed Lab. Form No. 45.

3.5 Upon completion of a project, the Project Manager shall submit a report to the Materials Bureau showing the quantity of each type of material inspected and sampled.

3.6 As a guide to the inspector, all applicable specifications for fencing materials can be found in Montana Standard Specification for Road and Bridge Construction, Section 712.

4 Chain Link Fence:

4.1 Inspect and sample chain link fence according to AASHTO M 181.

5 Woven Wire:

5.1 Inspect and sample woven wire according to AASHTO M 279.

6 Barbed Wire:

6.1 Inspect and sample barbed wire according to AASHTO M 280. The following is provided as a general guide for field personnel:

6.1.1 *Field inspection for General Workmanship:* For the purpose of inspection, a maximum of two spools from the lot shall be inspected for barb length, spacing, overall length, and workmanship. Inspection for barb spacing is normally performed on the outer 25 feet (7.6 m) length of a spool.

Note 1 – Field personnel may measure barb spacing and inspect for general workmanship. When the barb spacing is measured in the field, the results must be forwarded to the Materials Bureau along with samples for physical testing.

6.1.2 *Re-Inspection:* If either of the sample spools fails to meet the requirements for barb length, spacing, overall length, and workmanship, two additional spools shall be selected at random for inspection. If either of these spools fails to meet the requirements, the lot will be rejected.

6.1.3 *Sampling:* For test purposes, select one spool at random from every 50 spools or fraction thereof in a lot, or a total of seven samples, whichever is less. A lot shall consist of all the spools of a single construction (Design Number) of barbed wire delivered at the same time.

6.1.4 *Test Specimens for Physical Testing:* Cut a 4-foot (1.2 m) length of barbed wire from the end of each spool and submit to the Materials Bureau for testing. The specimen(s) will be tested for mass of coating and breaking strength.

6.1.5 *Lot Size for Retests:* If one or more of the individual wire specimens fails, retest the lot. For retest purposes, four additional spools of barbed wire for each 50 spools shall be sampled. The lot size then becomes 50 spools.

7 Hardware for Barbed or Woven Wire:

7.1 *Inspection* - Stay wires, brace wires, tie wires, and wire clamps shall be inspected for gauge, condition of galvanizing and compliance with specifications. Any tendency of coating to flake off when wire is manipulated should be observed and noted.

8 Steel Fence Posts and Assemblies:

8.1 Inspect and sample steel fence posts and assemblies according to AASHTO M 281.

9 Wood Fence Posts:

9.1 Inspect and sample wood fence posts according to MT 404.